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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,332	09/30/2003	Atsushi Sugasaki	Q77298	2251

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EXAMINER

LEE, SIN J

ART UNIT PAPER NUMBER

1752

DATE MAILED: 01/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/673,332

Applicant(s)

SUGASAKI ET AL.

Examiner

Sin J. Lee

Art Unit

1752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14,21 and 22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6,8-14,21 and 22 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/28&31,12/23/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. In view of the sworn English translation of the priority document JP'575 (which is filed on April 3, 2003), previous 102(e) rejection on claims 1-14, 21 and 22 over Kunita et al'026 and previous 102(e) rejection on claims 1-6, 8-14, 21 and 22 over Fujimaki et al'893 are hereby withdrawn.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-6, 8, 11-14, 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanda et al (EP 0 745 900 A1) (with Fujimoto et al (US 6,897,006 B2) which is being cited here to support the Examiner's assertion that *Methylene blue is an infrared absorbent*).

In Example 2, Kanda teaches a copolymer made from the monomers of butadiene, $\text{CH}_2=\text{C}(\text{CH}_3)\text{COOC}_2\text{H}_4\text{O}\{\text{CO}(\text{CH}_2)_5\text{O}\}_2\text{H}$, ω -carboxydi(pentamethylenecarboxy)oxyacrylate ($\text{CH}_2=\text{CHCOO}-(\text{C}_5\text{H}_{10}\text{COO})_2\text{H}$ – see pg.5, lines 1-14), ethylene glycol dimethacrylate ($\text{CH}_2=\text{C}(\text{CH}_3)-\text{COOCH}_2\text{CH}_2-\text{OCO}-\text{C}(\text{CH}_3)=\text{CH}_2$), and styrene. The monomer unit of ethylene glycol dimethacrylate teaches present repeating unit having a radical-polymerizable group of formula (A) (present X being an oxygen atom). Kanda also teaches the equivalence of the monomer unit of ω -carboxydi(pentamethylenecarboxy)oxyacrylate ($\text{CH}_2=\text{CHCOO}-$

Art Unit: 1752

($C_5H_{10}COO$)₂-H) and the monomer unit of $CH_2=CHCOO-C_3H_6-COOH$ (see pg.5, lines 12-14). It would have been obvious to one skilled in the art to replace the monomer unit of ω -carboxydi(pentamethylenecarboxy)oxyacrylate ($CH_2=CHCOO-(C_5H_{10}COO)_2-H$) with the monomer unit of $CH_2=CHCOO-C_3H_6-COOH$ in Kanda's copolymer of Example 2 with a reasonable expectation of obtaining a photosensitive resin composition which is superior in water-developing properties, resilience, strength of resin plate after exposure, elongation at break, and transparency of resin plate. The monomer unit of $CH_2=CHCOO-C_3H_6-COOH$ teaches present repeating unit of formula (I) (present A being an oxygen atom and present R^2 being a linking group which includes 3 carbon atoms and 6 hydrogen atoms). Kanda teaches a photosensitive resin composition which contains his copolymer, photopolymerizable unsaturated monomers and a photopolymerization initiator in Examples 1 and 2. Kanda also teaches (pg.9, lines 15-30) that his composition can additionally include one of more thermal addition polymerization inhibitor, which examples include methylene blue as well as hydroquinone. Based on Kanda's teaching, it would have been obvious to one skilled in the art to include methylene blue and hydroquinone as thermal addition polymerization inhibitors in Kanda's composition with a reasonable expectation of obtaining a photosensitive resin composition which is superior in water-developing properties, resilience, strength of resin plate after exposure, elongation at break, and transparency of resin plate. *Methylene blue is an infrared absorbent* as evidenced by Fujimoto et al, col.8, lines 20-21, line 45. Kanda applies his photosensitive resin composition onto a

polyester sheet to form a photosensitive resin plate (see Example 1). Therefore, Kanda's teaching renders obvious present inventions of claims 1-6, 8, 11-14, 21 and 22.

4. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanda et al (EP 0 745 900 A1) in view of Bi et al (5,997,993).

As examples of his photoinitiators, Kanda teaches benzoin, anthraquinone, acetophenone and benzophenones (see pg.8, lines 33-38). Those photoinitiators are known to be equivalent to iodonium salt and sulfonium salt, as evidenced by Bi et al, col.7, lines 29-35. Therefore, it would have been obvious to one skilled in the art to use an iodonium salt or a sulfonium salt as Kanda's photoinitiator because those photoinitiators and Kanda's photoinitiators were art-recognized equivalents at the time the invention was made. Therefore, Kanda in view of Bi would render obvious present inventions of claims 9 and 10.

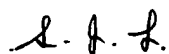
Allowable Subject Matter

5. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Kanda does not teach or suggest present binder of claim 7 having an acrylic backbone-chain or a urethane binder, which is used in combination with the binder polymer of claim 6.

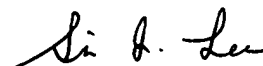
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sin J. Lee whose telephone number is 571-272-1333. The examiner can normally be reached on Monday-Friday from 9:00 am EST to 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly, can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



S. Lee
January 6, 2006



SIN LEE
PRIMARY EXAMINER